

Attachment 1
Summary of Submittals for the Remedial Action at
Del Amo Superfund Site, Waste Pits Operable Unit

| TASK | DELIVERABLE | REF NO. | NO. OF COPIES | DUE DATE (calendar days) |
|-------------|--|----------------|----------------------|--|
| 2.1.1 | RA Work Plan, Component 1 | | 2 | within 30 days after Respondents select approved project manager |
| 2.1.1 | RA Work Plan, Component 2 | | 2 | within 120 days after Respondents select approved project manager for first component (RCRA equivalent cap |
| 2.2.1 | Monthly Progress Reports | | 2 | by 15th of each month |
| 4.1 | Sampling and Analysis Plan | | 2 | within 30 days after Respondents select approved project manager |
| 4.2 | Updated Health and Safety Plan (HASP) | | 2 | within 30 days after Respondents select approved project manager |
| 4.3 | Updated Construction Quality Assurance Plan or letter requesting to use existing one | | 2 | within 30 days after Respondents select approved project manager |
| 4.4 | Deed Restrictions | | 3 | within 45 days after Respondents select approved project manager |
| 6.1 | Updated Operations and Maintenance (O&M) Manual | | 2 | at least 45 days prior to start of operation of any component |
| 6.5.4(3) | Date Evaluation Summary Report | | 2 | within 60 days after receipt of analytical results from lab |
| 7.2.1 | Prefinal Inspection Report | | 2 | within 30 days after Final Inspection of each component |
| 7.3.1 | Remedial Action Report | | 2 | within 30 days after Respondents conclude that all work has been performed on both components |

Attachment 2
Work Breakdown Structure (WBS) for
Remedial Action (RA)

1.0 Introduction

- .1 Site Description
- .2 Purpose
- .3 General Requirements
 - .1 Conducting the Remedial Action
 - .2 Summary of Deliverables
 - .3 Items covered by RA
 - .4 Items to furnish
 - .5 Guidance and Reference Material
 - .6 Communication
- .4 Timeframes and Deadlines

2.0 Project Planning and Support

- .1 Project Planning
 - .1 Develop RA Work Plan
 - (a) Methodologies, Plans, Deliverables, and Schedules
 - (1) Contractor Selection
 - (2) Permitting Requirements
 - (3) Operations and Maintenance Plan
 - (4) Deed Restrictions
 - (5) Health and Safety Plan
 - (b) Schedule
 - (c) Project Team
 - (d) Technical Approach
 - (e) Site Management Plan
- .2 Project Management
 - .1 Prepare Periodic Status Reports
 - .2 Coordinate with Local Emergency Response Teams

3.0 Community Relations

- .1 Prepare Fact Sheets
- .2 Technical Support
- .3 Public Meeting Support
- .4 Public Notice
- .5 Reporting to the Montrose/Del Amo Partnership Group
- .6 Report Copies
- .7 Maintain Information Repository

4.0 Site Specific Plans

- .1 Sampling and Analysis Plan
 - .1 Environmental Sample Acquisition
 - .2 Sample Analysis
 - .3 Analytical Support and Data Validation
 - .4 Data Evaluation
- .2 Update Health and Safety Plan
- .3 Update Construction Quality Assurance (CQA) Plan
 - .1 Responsibility of Key Personnel
 - .2 CQA Personnel Qualifications
 - .3 Inspection Activities
 - .4 Sampling Requirements
 - .5 Documentation
- .4 Deed Restrictions

5.0 Detailed Resident Inspection (Resident Engineer)

- .1 Provide Field Presence and Oversight
 - .1 Maintain Field Logs and Daily Diaries
 - .2 Develop Sketches Reflecting Field Conditions
 - .3 Review Submitted Construction Drawings
 - .4 Prepare Reports on Inspections
 - .5 Monitor, Update, & Report Construction Progress
 - .6 Conduct Final Inspection
 - .7 Monitor Quality Assurance/Quality Control Procedures

6.0 Project Performance (Operation and Maintenance [O&M])

- .1 Review O&M Manual
- .2 Ensure Adequate Training for O&M Staff
- .3 Operate the Remedy
- .4 Remediation System Operational Performance
 - .1 Evaluate Equipment
 - .2 Performance Tests Oversight
 - .3 Gather and Test Samples
 - .4 Report Project Performance
- .5 Compliance Monitoring
 - .1 Environmental Sample Acquisition
 - (1) Mobilization and Demobilization
 - (2) Field Investigation
 - .2 Sample Analysis
 - .3 Analytical Support and Data Validation
 - .4 Data Evaluation
 - (1) Data Usability Evaluation

- (2) Data Reduction, Tabulation, and Evaluation
- (3) Development of Data Evaluation Report

7.0 Project Completion and Close Out

- .1 Demobilization
 - .1 Removal of Temporary Facilities
 - .2 Site Restoration
- .2 Pre-Final/Final Activities
 - .1 Make Pre-Final/Final Inspection
 - .2 Make Lockout Inspection
- .3 Remedial Action Report
 - .1 Prepare Remedial Action Report

Attachment 3

Regulations and Guidance Documents

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RA process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures September 89, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund — A Handbook, U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, Prepublication version.
17. Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.

24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
26. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
27. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
28. Procedures for Completion and Deletion of NPL Sites, U.S. EPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.
29. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
30. *Remedial Design/Remedial Action (RD/RA) Handbook*, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995.
31. Revision of Policy Regarding Superfund Project Assignments, OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
32. Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.
33. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
34. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
35. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
36. Structure and Components of 5-Year Reviews, OSWER Directive No. 9355.7-02, May 23, 1991. [Guidance, p. 3-5]
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.
38. Superfund Remedial Design and Remedial Action Guidance, U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. U.S. EPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, U.S. EPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, U.S. EPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.

Attachment 4

| | | | |
|--|-------------|--|---|
| TRANSMITTAL OF DOCUMENTS FOR ACCEPTANCE BY EPA | | DATE: | TRANSMITTAL NO. |
| TO: | | FROM: | <input type="checkbox"/> New Transmittal <input type="checkbox"/> Resubmittal of Transmittal No. _____ |
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| ACCEPTANCE ACTION | | | |
| DOCUMENTS FOUND ACCEPTABLE (LIST BY SUBTASK NO.) | | NAME/TITLE/SIGNATURE OF REVIEWER DATE | |

Attachment 5

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Attachment 6

*Description of Performance Standards
(based on "Record of Decision for Del Amo Waste Pits Operable Unit
Del Amo Facility Proposed Superfund Site
Los Angeles, CA"
September 5, 1997)*

DESCRIPTION AND SPECIFICATION OF THE REMEDY

The remedy selected by this ROD is described below. The remedy as designed and implemented shall meet all requirements and specifications described herein. Further, the remedy as designed and implemented must meet all ARARs as identified in Attachment A of the ROD.

The selected remedy for clean-up of the Waste Pits Area consists of the following components:

- (1) A RCRA-equivalent cap,
- (2) Soil vapor monitoring,
- (3) Surface water controls,
- (5) Soil vapor extraction,
- (6) Security fencing,
- (7) Deed restrictions, and
- (8) Long-term operation and maintenance.

RCRA-Equivalent Cap and Associated Monitoring

The RCRA-equivalent cap (meeting all identified ARARs) shall be constructed over the waste and contaminated soil. Based on existing information, the cap will cover slightly less than 4 acres. The cap shall be applied over all waste pits (1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 2F) and related area as depicted in Figure 3 of the ROD. The cap shall include, among other things, a surface water drainage layer, a low-permeability layer, and a gas collection layer. The cap shall be constructed, operated, and maintained to attain the following:

- (1) to prevent direct human contact with contaminants;
- (2) to prevent generation of uncontrolled runoff and wind blown dust;
- (3) to prevent the emission of contaminants into the air;
- (4) to prevent rainwater from washing through the waste pits and carrying contaminants into the groundwater; and
- (5) to prevent rainwater from washing through the contaminated vadose zone soils below the pits and carrying them into the groundwater.

Consistent with the ARARS set forth in Attachment A of the ROD: the physical barrier created by the cap shall prevent direct human contact with the contaminants, the surface water collection and diversion system associated with the cap shall prevent uncontrolled runoff, the impermeable barrier created by the cap shall prevent rainwater from infiltrating the soil and transporting contaminants into the groundwater, and the cap's vapor collection and treatment system shall prevent the emission of unacceptable levels of contaminants into the air.

All of the ARARs identified in Attachment A of the ROD which pertain to the cap shall be attained. The primary ARARs that the Settling Defendants must achieve would be met during implementation of this action, including those specified by Title 22 of the California Code of Regulations, describe closure requirements for hazardous waste disposal facilities. The closure requirements specify that the design of the cap shall be sufficient to prevent damage due to settling and earthquakes. Any treatment units associated with the cap must have security fencing. The cap also must be designed with surface water controls to prevent ponding of water on its surface and to prevent runoff onto adjacent properties. Required monitoring associated with the cap includes soil vapor monitoring. The soil vapor monitoring is to be conducted at varying depths around the pits area in order to help determine whether any vapors are migrating or spreading laterally out from under the cap. These monitoring points could be located within the Waste Pits Area (lots 36 and 37) or on adjacent properties.

Security fencing, to meet State ARARs, shall be installed around any treatment units associated with the cap that could potentially present a target for unauthorized access or tampering.

Long-term maintenance and repairs to the cap shall be conducted as part of this remedy for as long as the waste material remains at the Site. The maintenance and repairs shall be carried out on a schedule with a frequency such that the effectiveness of the cap and its compliance with the requirements of the ROD are maintained at all times. If the cap is at any point unable to be repaired without replacement, such as when it has reached the end of its natural life, then the cap shall be replaced so long as the waste remains in the pits.

A long-term operation and maintenance plan for the cap shall be established and approved by EPA before the cap is constructed. This plan shall provide, at a minimum:

- 1) Specification of all activities necessary to ensure complete maintenance and repairs of the cap over its lifetime and comply with ARARs relating to such maintenance and repair;
- 2) The schedule and frequency for maintaining the cap and for the execution of all activities identified;
- 3) Specification of all monitoring, analysis, sampling and other tests necessary to ensure the performance and integrity of the cap and identify cap components requiring repair or replacement;
- 4) Specification of the schedule and frequency for such monitoring, analysis, sampling, or other tests;
- 5) Specification of all regulatory agencies and persons within those agencies to which results and confirmation of maintenance and repairs shall be sent, and approvals which shall be necessary.

Once the operations and maintenance plan is approved by EPA, the requirements in it shall become part of the approved remedy for the site. The operations and maintenance plan shall not conflict with or negate any requirements or specifications of the ROD.

Soil Vapor Extraction and Associated Monitoring

The SVE system shall be constructed, operated, and maintained to remove contaminants from the soil via the vapor phase, according to the specifications and requirements provided below.

The SVE System shall be constructed, operated, and maintained to achieve the following:

- (1) to protect groundwater from contaminants that migrate out of the pits;
- (2) to protect groundwater from contaminants that migrate out of the vadose soil below the pits; and
- (3) to protect groundwater from contaminants in the soil below the pits in the event that the water table rises into the contaminated soil.

This remedy shall include design, installation, operation, and long-term maintenance of a soil vapor extraction (SVE) system to meet the above performance standards as specified below. The SVE system shall be applied to the unsaturated soils under the waste pits and above the groundwater, in the soil areas as defined below. The SVE system shall clean these soils to an interim soil standard as specified in the ROD. A monitoring system shall be established, for the soils and soil vapor under the pits, to monitor the remediation progress. The SVE system shall establish and maintain a zone of soil under the waste pits (see section entitled "Where SVE Shall Be Applied" for locational details) which does not exceed the interim soil standard.

Incremental Groundwater Contribution. The SVE portion of this remedy shall be designed to limit the *additional* contamination the waste pits and adjacent contaminated soil shall be allowed to contribute to groundwater now and in the future. The groundwater beneath the waste pits currently is highly contaminated from both the waste pits themselves and other upgradient sources. The *incremental groundwater contribution* is defined as the amount by which the soils under the pits would be able to *increase* the groundwater contaminant concentration if the groundwater were clean today. The SVE action, by maintaining a cleaned zone of soil, will place a limit on this incremental contribution.

The contaminant concentrations in groundwater, according to the groundwater sampling and analysis conducted in late 1996, currently range from 12,000 ppb to 470,000 ppb benzene, less than 100 ppb to 15,000 ppb ethylbenzene, and 29 ppb to 440 ppb phenol, among others. The exact wells to be used in calculating the existing groundwater concentrations of these contaminants and any other contaminants amenable to SVE treatment for determining the allowable incremental groundwater contribution, will be determined during design.

SVE Cleanup Standards. The performance standard for the SVE system shall be that the pits will not be able to cause an incremental groundwater contribution in excess of 0.5% of the existing groundwater concentration, at any point in time. When a final groundwater remediation standard is selected by the groundwater ROD, the incremental contribution shall be limited to 0.5% of the groundwater concentration at the time. The groundwater ROD will address any potential changes to this requirement if the groundwater contaminant concentrations ever approach federally mandated remediation levels.

The remedial design established a vadose zone transport model, approved by EPA, that evaluates the contributions from all areas of soil under the pits. The model estimates the incremental concentration due to both (1) the soils to which SVE can be applied, as well as (2) the soils to which SVE cannot be applied. The interim soil standard for SVE shall be set such that when the soils to which SVE can be applied are cleaned to that value, the overall incremental contribution from the waste pits does not exceed 0.5% of the existing groundwater concentration. The SVE system shall be run such that soils are maintained at levels that will maintain this condition indefinitely. If the existing groundwater concentration changes, then the interim soil standard shall be adjusted based on the same model and calculation.

Where SVE Shall Be Applied. The depth of the SVE application shall be between the capillary fringe above the water table and just below the bottom of each waste pit. The areal extent of the SVE application shall extend all across the pits themselves and laterally beyond the boundaries of the pits in all directions to whatever distance is necessary such that all interim soil standards as specified in this ROD are met. This could extend beyond the boundaries of lots 36 and lot 37. The SVE system shall be applied so as to address soil contamination which has emanated or is emanating from the waste pits, and will not be designed to address contamination if it is emanating solely from other sources.

The SVE system need not be applied to the waste itself. If the SVE system applies too strong a pneumatic influence near the bottom of the waste pits, it may have the undesirable effect of drawing contaminants directly downward out of the waste pits. Similarly, if a significant pneumatic influence from the SVE system is applied too close to the capillary fringe, it may have the undesirable effect of pulling-in volatile contaminants that exist in the capillary fringe as a result of off-gassing and capillary contaminants from the groundwater. The SVE system shall be designed to minimize these undesirable effects. It is *not* however, a requirement of this ROD that the pneumatic influence near the pits' bottom or near the capillary fringe be reduced to zero; this may not be possible. Rather, the influence near these areas shall be lessened as necessary to reduce or eliminate those undesirable effects.

SVE Monitoring. The remediation progress of the SVE system shall be monitored with appropriate soil and soil gas monitoring. The ROD recognizes that contaminants may exist, at any given location, in one or more of several phases, including sorbed to soil, soil vapor, dissolved in soil moisture, and residual phase. If only one phase is measured, the amount of contamination in other phases shall be calculated based on supportable partitioning relationships, and the contamination in all phases shall be included in estimating the impact to groundwater.

Other Requirements. The SVE system shall be designed with the appropriate safety features required to allow safe unattended operation. The soil vapor extraction and treatment system shall be inspected and monitored on a regular basis and repaired as needed. Appropriate security fencing, required by State ARARs, shall be installed around the SVE treatment units.

A long-term operation and maintenance plan shall be written for the SVE system. This plan shall be completed and approved by EPA prior to the operation of the system. The plan shall include, at a minimum, all of the following details:

- 1) Specification of all activities necessary to meet all ARARs and other requirements put forth by this ROD, and a schedule and frequency by which all such activities shall take place;
- 2) Specification of all activities necessary to operate and maintain the system in safe working order, and a schedule and plan of

execution for all such activities;

- 3) Specification of all sampling, testing, and monitoring associated with operation and maintenance of the system and the scheduling and frequency for these actions;
- 4) Specification of all sampling, testing, and monitoring associated with verifying the performance of the SVE system and the scheduling and frequency for those actions.

The SVE system shall meet all ARARs specified in the ROD that pertain to the SVE system and its components. The major ARARs that would be met during implementation of the SVE system include emission standards for the vapor treatment system and monitoring requirements for response actions for hazardous waste facility closure. Such monitoring includes groundwater monitoring to evaluate potential changes in groundwater conditions over time associated with the remediation.

Deed Restrictions

To prevent inappropriate future land use or development, the remedy also requires deed restrictions, prohibiting future residential use of the Waste Pits Area and prohibiting any future use which could impact the integrity of the cap.